

**RIAD VISUAL IMAGING BRANCH ASSESSMENT****by**

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**INTRODUCTION**

Every year the demand to visualize research efforts increases. The visualization provides the means to effectively analyze data and present the results. The technology support for visualization is constantly changing, improving and being made available to users everywhere. As such, many researchers are entering into the practice of doing their own visualization in house--sometimes successfully, sometimes not.

In an effort to keep pace with the visualization needs of researchers, the Visual Imaging Branch of the Research, Information and Applications Division at NASA Langley Research Center has conducted an investigation into the current status of imaging technology and imaging production throughout the various research branches at the center. This investigation will allow the Branch to evaluate its current resources and personnel in an effort to identify future directions for meeting the needs of the researchers at the Center. The investigation team, which consisted of the ASEE fellow, the Head of the Video Section and the Head of the Photo Section developed an interview format that could be accomplished during a short interview period with researchers, and yet still provide adequate statistics about items such as in-house equipment and usage. The team met personally with over 120 researchers from 20 different branches at the Center. On the average, each of the meetings lasted approximately an hour and a half and were conducted in an open-dialogue format.

**SYNOPSIS**

It's evident that researchers prefer to have their own imaging technology on site for a number of reasons. If the equipment is in-house, they are able to control its availability. They also have direct input to the type of equipment purchased. Younger researchers tend to have a different attitude about the imaging techniques and process than their older counterparts. Because the equipment has become easier to obtain and use, they often feel they can do what they need themselves.

There is a difference between imaging techniques for technical purposes and those for presentation purposes: one is analysis and study; the other is most often for external information dissemination. On the whole, the researchers acknowledge this difference. Generally, they use their imaging technology for analyzing data or for technical presentations, which are most often internal for their peers or management. As such, the attention to technical content is highly detailed and complete for their audience. However, since it is not a priority, the aesthetics of the presentation may be lacking. With the increasing awareness of video technical reports, more will be produced. Researchers wonder how they will be classified. As peer reviewers themselves publish in this format, the acceptability will broaden. Most researchers recognize the need for producing general audience projects for information dissemination and/or advocacy purposes, especially with NASA's current emphasis on technology transfer. As a matter of fact, almost all of the groups expressed an interest in pursuing a production of this nature, using both still photography and video. Since they are engaged in research, they want the process to be smooth and not take up a lot of their time; otherwise, they will avoid assistance and attempt to do a project in-house. Archival methods vary and are haphazard in most cases. Although all researchers agree that archiving results, photos, productions, etc. is important, their methods vary. The primary request in this area is to be able to electronically archive and access negatives and photographs.

Repeatedly, researchers have commented on the tremendous amount of visual imaging technology and professional personnel throughout the field, but they are concerned with the "shot gun" effect that still exists. It was suggested that a central location could act as a clearing house to

discuss requests. Until they see a photo-layout or video production done by someone else, many are not aware of the level of quality that exists here.

At some point during the course of research, all groups have had support from the Photo Section, and half of them had support from the Video Section. For the most part, anyone who had used Branch services within the last several years gave high marks for response time and quality. Although a researcher may not have had a positive experience in the past when using services in the Photo or Video section, seldom did anyone use an outside service. Usually, they found a way to do it themselves or did without the service. In almost every case, the number one request related to future support from the Visual Imaging Branch is for a means to transfer computer files electronically to facilities, where the files can be processed (if necessary), enhanced, used for production, or turned into a hard copy format, and then returned to the researcher via the same method of transfer. They are not interested in searching for the particular service they need, nor physically going to that location. Also high on the wish list is someone to help them when they are interested in using visual imaging services elsewhere at the Center.

#### **RECOMMENDATIONS**

Since there is such a large number of researchers using their own equipment for still, video, or graphics production in some form, input from the Branch about acquisition is prudent. As they are concerned with maintaining the quality and integrity of the image, they need to be aware of the best possible equipment their budgets will allow. Having the Branch involved as a consultant will save them the trouble of obtaining equipment information or meeting with the salespeople. Workshop sessions in all areas of imaging, with basic "how to" tips, could improve what they are currently doing. Many of researchers eventually want to do full-blown productions, which may require incorporating something they have generated in-house. Getting involved at the front end will provide more positive results for both the researcher and the Branch.

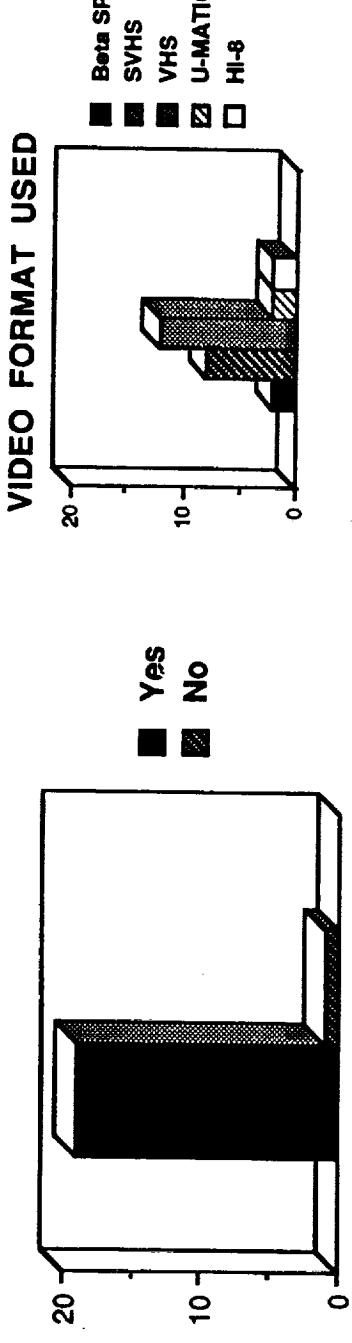
Better coordination and consolidation among all of the imaging facilities and personnel throughout the Center is required. At this time, it would be impossible to have all the facilities or personnel in one location; however, communication among these facilities and the people who operate them is essential. Having a focal point of contact with information on all available facilities and personnel is necessary for the researcher who wishes to initiate a project. Since convenience for the researcher is a high priority, streamlining the process will make it more attractive to use. This point of contact should able to coordinate efforts of facilities within the Directorates of Management Operations (RIAD), Electronics (ACD) and Systems Engineering and Operations (FENGD) as they are needed for the researcher's project. Each of these areas provides unique services to the researcher and can be more tightly integrated to facilitate their use. The current Video Users Group is outdated and ineffective, and a new group, which specifically represents all active video and electronic imaging support areas throughout the Center should be organized. This group would need to meet regularly and establish lines of communication. Each support area (RIAD, ACD, FENGD) should understand the functions of the other areas and how they mesh together, and from that, develop the focal point of contact for researchers who need visual imaging support.

With the heavy demand to transfer files for image analysis and enhancement, CD-Rom access and production will be essential in the future. Exploring the option of using a fiber optics network is a consideration.

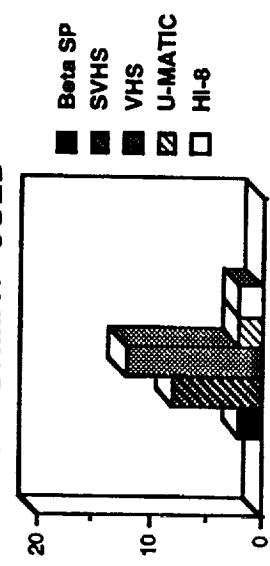
The Division should consider another survey to assess the need for visualization in a research report, from the point of view of the receiver. There are individuals in the research community who believe the visual imaging aspects of a project report are unnecessary. However, the receivers, whether they are technical or lay audiences, would request and, therefore, justify the need for the visual imaging.

Imaging technology and visualization at Langley Research Center is going to continue to grow, because the demand for it will continue to grow. At present, it is imperative to unite the state-of-the-art resources and highly qualified personnel. Decisions regarding equipment and facilities should be influenced by the customers--the research community--and their changing needs.

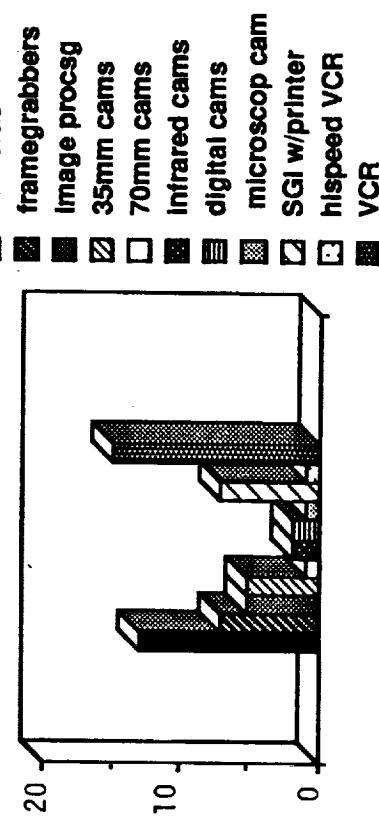
### IMAGING CAPABILITY IN-HOUSE



### VIDEO FORMAT USED



### EQUIPMENT IN-HOUSE



### REQUESTS FOR FUTURE SERVICES

